



**HARRIS**

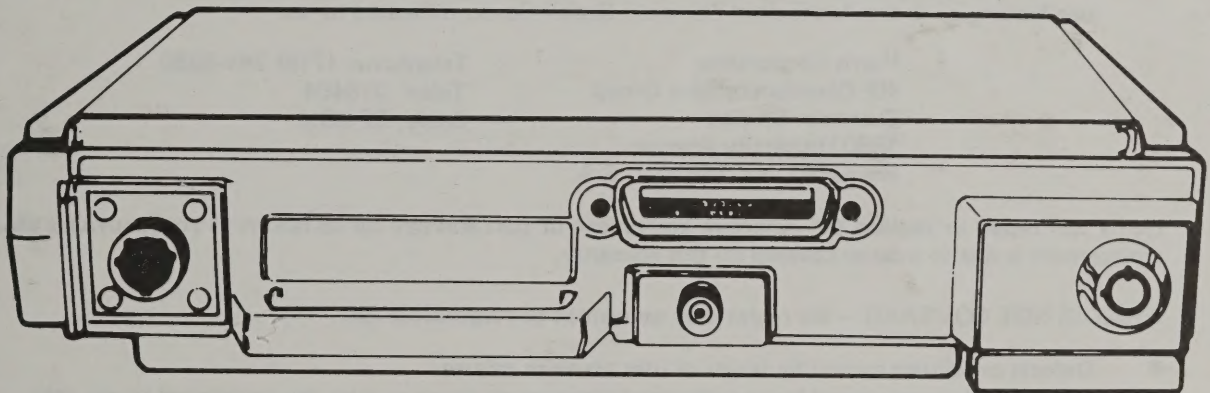
RF COMMUNICATIONS

# ALPHA 4000 SERIES

## CELLULAR MOBILE TELEPHONE PROGRAMMING

AND

## INSTALLATION INSTRUCTIONS



A15 010





**LIMITED ONE YEAR WARRANTY  
HARRIS CORPORATION (RF COMMUNICATIONS GROUP)**

**FROM HARRIS TO YOU** — This warranty is extended to the original buyer and applies to all Harris Corporation, RF Communications Group equipment purchased and employed for the service normally intended, except those products specifically excluded.

**WHAT WE WILL DO** — If your Harris Corporation, RF Communications Group equipment purchased from us for use outside the United States fails in normal use because of a defect in workmanship or materials within one year from the date of shipment, we will repair or replace (at our option) the equipment or part without charge to you, at our factory. If the product was purchased for use in the United States, we will repair or replace (at our option) the equipment or part without charge to you at our Authorized Repair Center or factory.

**WHAT YOU MUST DO** — You must notify us promptly of a defect within one year from date of shipment. Assuming that Harris concurs that the complaint is valid, and is unable to correct the problem without having the equipment shipped to Harris:

- Customers with equipment purchased for use outside the United States will be supplied with information for the return of the defective equipment or part to our factory in Rochester, NY, U.S.A., for repair or replacement. You must prepay all transportation, insurance, duty and customs charges. We will pay for return to you of the repaired/replaced equipment or part, C.I.F. destination; you must pay any duty, taxes or customs charges.
- Customers with equipment purchased for use in the United States must obtain a Return Authorization Number, properly pack, insure, prepay the shipping charges and ship the defective equipment or part to our factory or to the Authorized Warranty Repair Center indicated by us.

Harris Corporation  
RF Communications Group  
Customer Service  
1680 University Avenue  
Rochester, NY 14610, U.S.A.

Telephone: (716) 244-5830  
Telex: 978464  
Cable: RFCOM

Harris will repair or replace the defective equipment or part and pay for its return to you, provided the repair or replacement is due to a cause covered by this warranty.

**WHAT IS NOT COVERED** — We regret that we cannot be responsible for:

- Defects or failures caused by buyer or user abuse or misuse.
- Defects or failures caused by unauthorized attempts to repair or alter the equipment in any way.
- Consequential damages incurred by a buyer or user from any cause whatsoever, including, but not limited to transportation, non-Harris repair or service costs, downtime costs, costs for substituting equipment or loss of anticipated profits or revenue.
- The performance of the equipment when used in combination with equipment not purchased from Harris.
- HARRIS MAKES NO OTHER WARRANTIES BEYOND THE EXPRESS WARRANTY AS CONTAINED HEREIN. ALL EXPRESS OR IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY ARE EXCLUDED.

**SERVICE WARRANTY** — Any repair service performed by Harris under this limited warranty is warranted to be free from defects in material or workmanship for sixty days from date of repair. All terms and exclusions of this limited warranty apply to the service warranty.

**IMPORTANT** — Customers who purchased equipment for use in the United States must obtain a Return Authorization Number before shipping the defective equipment to us. Failure to obtain a Return Authorization Number before shipment may result in a delay in the repair/replacement and return of your equipment.

**IF YOU HAVE ANY QUESTIONS** — Concerning this warranty or equipment sales or services, please contact our Customer Service Department.

# **ALPHA 4000 SERIES**

## **CELLULAR MOBILE TELEPHONE PROGRAMMING AND INSTALLATION INSTRUCTIONS**

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## ABOUT THIS MANUAL

This manual covers installation and programming of all ALPHA 4000 Series Cellular Mobile Telephones:

- AL-4000, ALPHA C; AMPS Compatible Cellular Transceiver
- AL-4200, ALPHA Cellphone; Cellular Mobile Telephone
- AL-4400, ALPHA Celebrity; Cellular Mobile Telephone
- AL-4600, ALPHA Custom; Cellular Mobile Telephone

The same basic transceiver is used in all models and differs only in the 'Feature Rom' installed.



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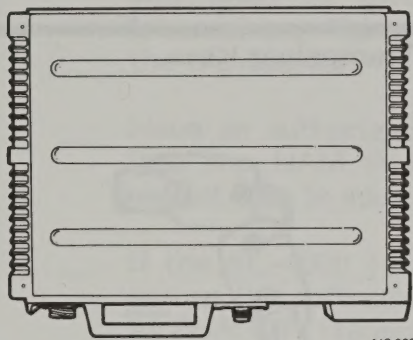
## SECTION 1

### QUICK CHECK

Check to see that you have everything you need to install your ALPHA Cellular Mobile Telephone as shown below.

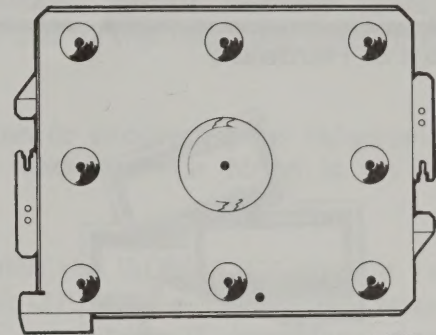
#### 1.1 ITEMS INCLUDED WITH YOUR ALPHA\*

— Transceiver (Radio)



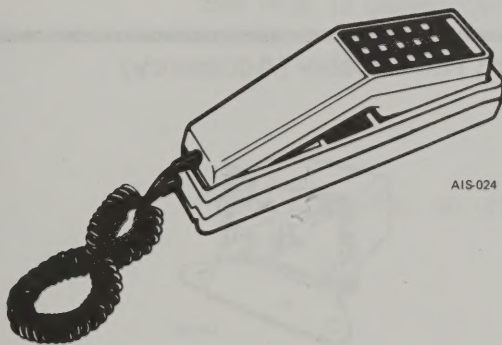
AIS-022

— Transceiver Mounting Tray



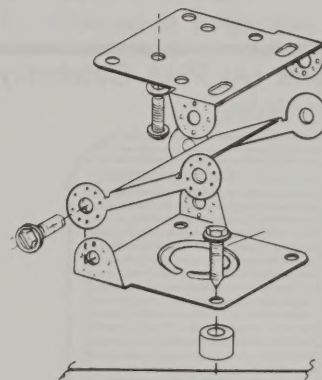
AIS-027

— Control Unit (Telephone)



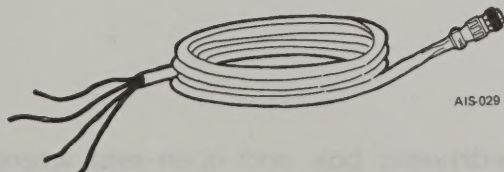
AIS-024

— Control Unit Mount



AIS-025

— Power Cable (colored wires)



AIS-029

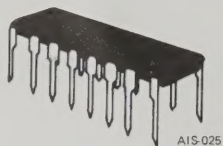
— Control Cable



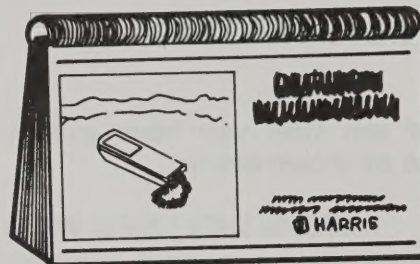
AIS-028

\* The ALPHA C package consists of just a transceiver, with mounting tray, keys, NAM, and installation hardware.

\_\_\_ NAM (Number Assignment Module)\*\*



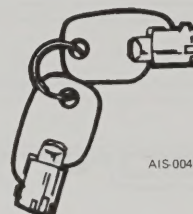
\_\_\_ Operator's Instruction Manual



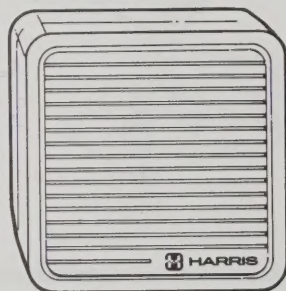
\_\_\_ Bags of Hardware



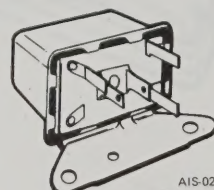
\_\_\_ Two Transceiver Keys



\_\_\_ Loudspeaker (ALPHA Celebrity & Custom Only)



\_\_\_ Horn Alert Relay (Accessory)



## 1.2

### REQUIRED TOOLS

\_\_\_ Mechanics Tool Set:

Sockets; standard and Phillips screwdrivers; box and open-end wrenches; pliers; punches; hammer.

\_\_\_ Power drill: preferably battery-operated, with bits.

\*\* May already be installed in transceiver.



- \_\_\_ Hole-cutter (required for installation of some antennas).
- \_\_\_ Electrician's diagonal pliers.
- \_\_\_ Connector crimpers: various sizes.

### 1.3 THINGS TO DO

- \_\_\_ Purchase an antenna and cable (see page 5).
- \_\_\_ Contact your cellular operating company to get a telephone number. You will need to give them the electronic serial\* number (ESN) of the transceiver. This can be found on the top of the test data sheet packed with the transceiver.
- \_\_\_ Have an authorized Harris Service Center program your telephone number into the NAM (Number Assignment Module). The NAM is an integrated circuit chip in your transceiver.
- \_\_\_ If the AL-4000 Transceiver is used with the ALPHA ET Mobile Telephone, ensure the software (integrated circuit U10 on the 10029-5800 board) in the ALPHA ET Transceiver is revision C or later. If necessary, contact the Harris Customer Service Department for updated software.

If a feature ROM is installed in the AL-4000, it should be removed before the unit is connected to the ALPHA ET, otherwise improper operation may result.

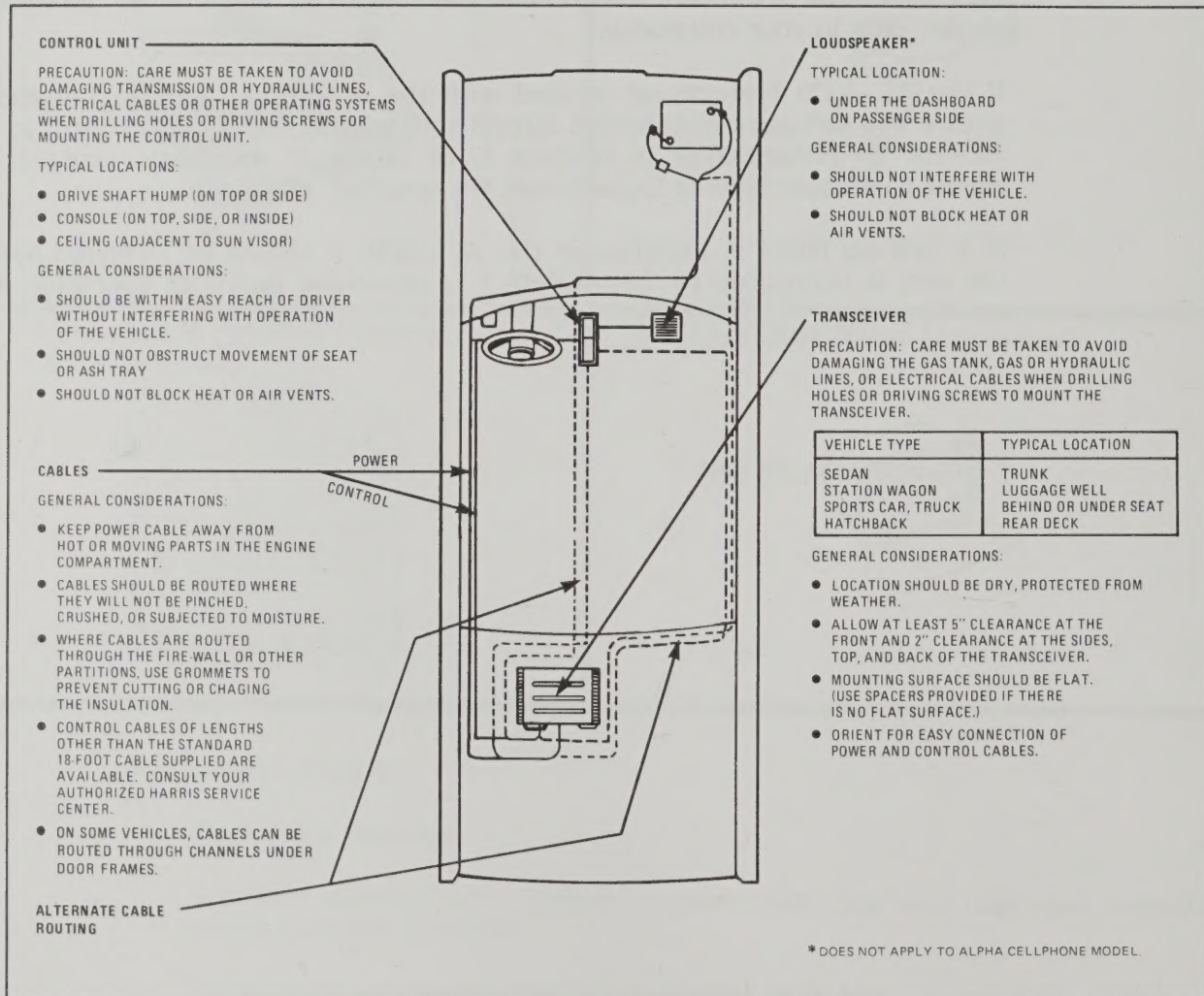
\* Not serial no. on unit

## SECTION 2

### PREINSTALLATION PLANNING

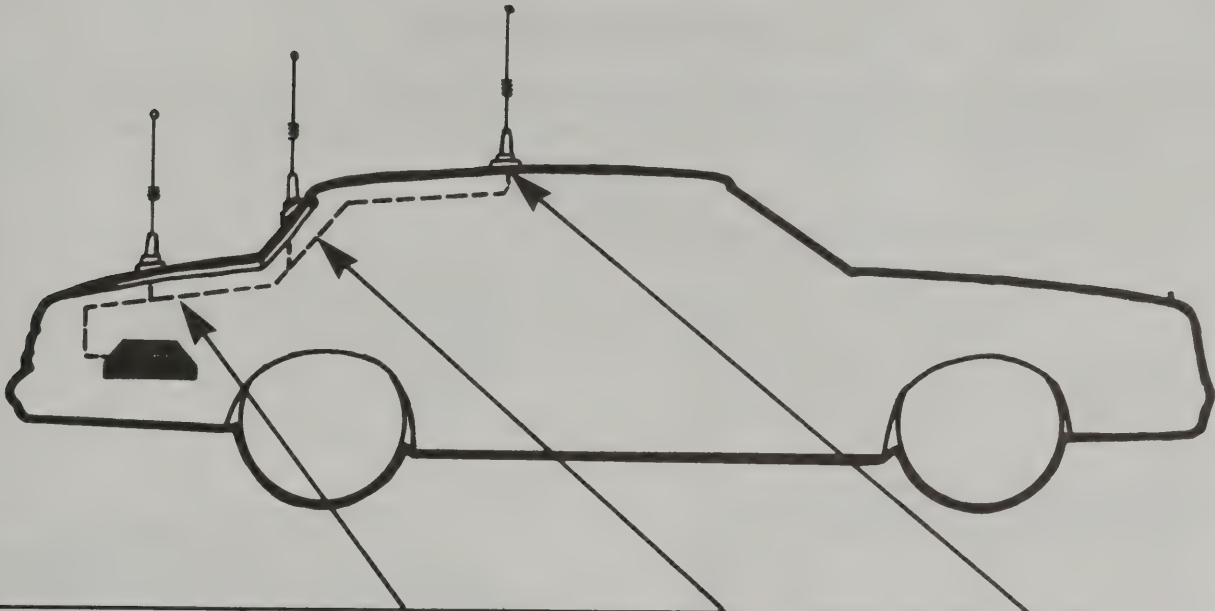
#### CAUTION

Avoid drilling unnecessary or damaging holes in your vehicle - determine the best location for each part of your ALPHA before beginning the installation. Read precautions below.



AIS-007





TYPE:	ELEVATED FEED	GLASS MOUNT	STANDARD
APPLICATION:	USE WHEN ROOF MOUNTING IS NOT DESIRED OR IF THERE IS NO GROUND PLANE.	USE WHEN GROUNDING IS DIFFICULT (EX. FIBER-GLASS BODY) OR TO AVOID DRILLING A HOLE IN VEHICLE.	USE IF POSSIBLE; THIS LOCATION PROVIDES BEST COMMUNICATIONS.
LOCATION:	REAR DECK (TRUNK LID OR FENDER).	TOP OF REAR WINDOW AWAY FROM DEFROSTER WIRES AND AT LEAST 1/2 INCH AWAY FROM METAL.	AS CLOSE TO CENTER OF ROOF AS PRACTICAL. (AT LEAST 13 INCHES FROM EDGE OF ROOF.)
DIAMETER OF MOUNTING HOLE (TYPICAL*)	1 INCH.	NO HOLES REQUIRED.	3/4 INCH.
ROUTE OF CABLE:	DIRECTLY TO TRANSCEIVER.	THROUGH WINDOW TRIM, ABOVE HEADLINER, AND DOWN THROUGH SIDE FRAME COVERING.	ABOVE HEADLINER AND THROUGH SIDE FRAME COVERING.
GROUNDING REQUIREMENTS:	NO GROUND PLANE REQUIRED. (MAY REQUIRE GROUND WIRE TO TRUNK LID BECAUSE OF STATIC).	NO GROUND PLANE REQUIRED.	REQUIRES GROUND PLANE.
RF PART NUMBER:	AL-4103	AL-4102	AL-4101

\*REFER TO ANTENNA MANUFACTURER'S INSTALLATION INSTRUCTIONS

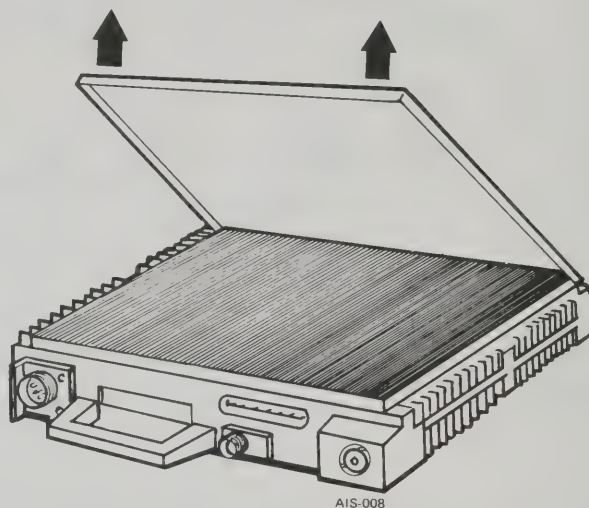
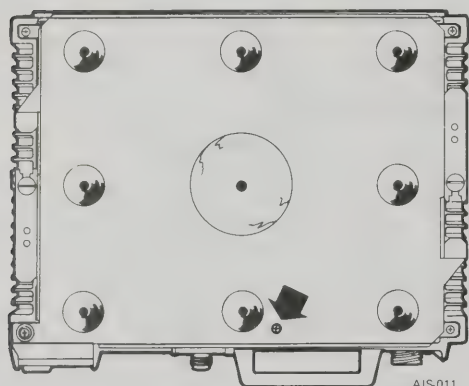
AIS-001

### SECTION 3

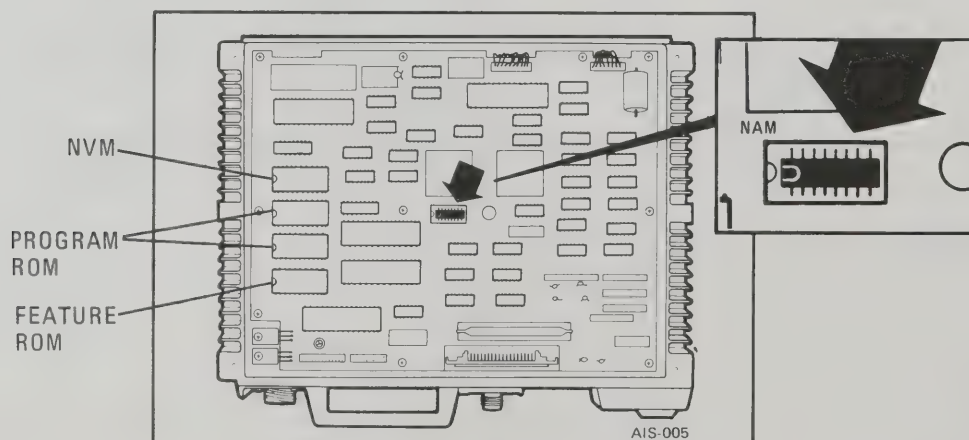
#### INSTALLING THE NAM

The NAM (Number Assignment Module) is an integrated circuit in your transceiver. The NAM should be programmed at an authorized Harris Service Center. (The service center may also install the NAM.)

1. Remove the top cover of the transceiver.



- a. Unscrew the Phillips head screw that can be accessed through the hole in the mounting plate and bottom cover of the transceiver.
  - b. Turn the transceiver right-side-up, lift up the top cover at the front of the transceiver, and remove from hinges at the rear.
2. Carefully place the NAM in its socket in the transceiver, oriented as shown below (do not bend leads).



3. Replace the top cover by reversing the procedure given in step 1.



## SECTION 4

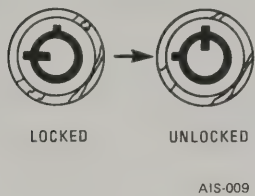
### MOUNTING THE TRANSCEIVER

Begin these installation procedures only after you have determined equipment locations and cable routes (see Preinstallation Planning), and have read the caution on page 4.

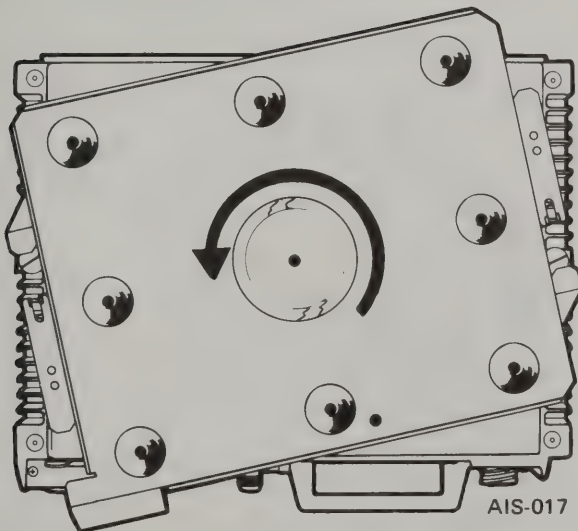
#### CAUTION

Make sure that you do not damage the gas tank, gas or hydraulic lines, electrical cables, or other operating systems when drilling holes or driving screws to mount the transceiver.

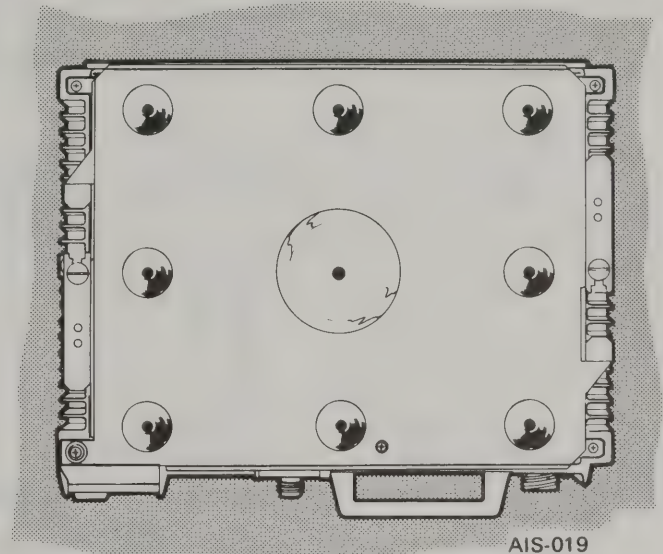
1. Remove the mounting tray from the transceiver.



- a. Unlock the transceiver.

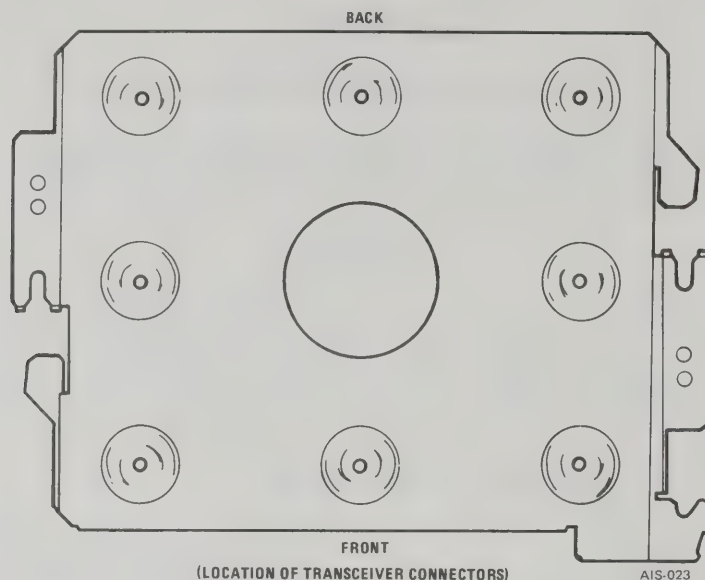


- c. Forcefully rotate the mounting tray counterclockwise, and lift from the transceiver.

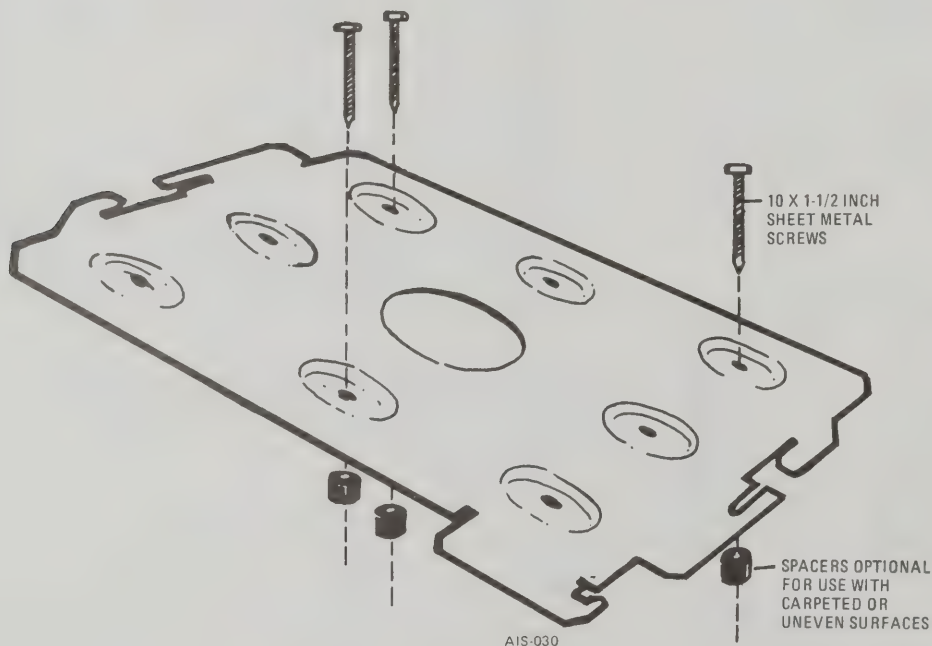


- b. Place the transceiver upside-down on a cloth-covered flat surface.

2. Secure the mounting tray (heed caution stated above).



- a. Position the mounting tray at the mounting location (see page 5), and select three mounting holes that will secure the tray without it wobbling.

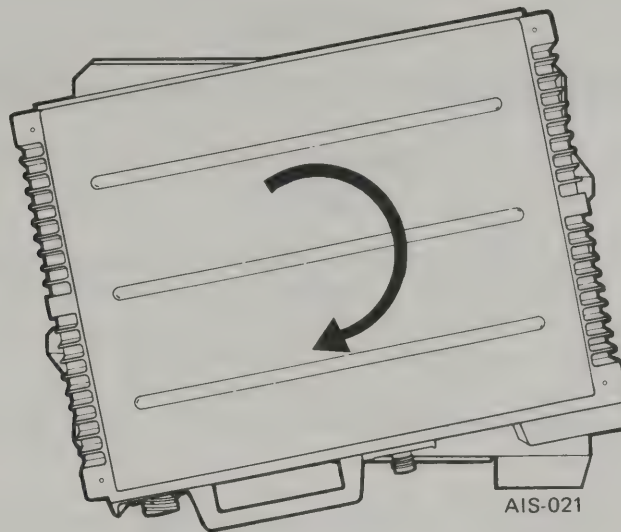


NOTE: MOUNTING TRAY MUST LIE FLAT. ANY WARPING MAY IMPEDE ATTACHMENT OF THE TRANSCEIVER TO THE TRAY.

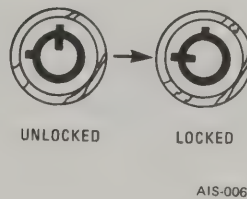
- b. Using a power driver, electric drill, or impact driver, drive the three self-starting screws through the selected holes. (If you wish to use a regular screwdriver, punch a pilot hole for each screw, using an awl [for metal, not leather] with the tray as a template.)



3. Lock the transceiver to the mounting tray.



- a. Place the transceiver on the mounting tray and rotate the transceiver fully clockwise.



- b. Lock the transceiver in place. Remove the key, and store it in a safe place. (If the key is ever lost, contact your authorized Harris Service Center for a replacement.)

## SECTION 5

### MOUNTING THE CONTROL UNIT AND LOUDSPEAKER

**CAUTION**

Before drilling holes or driving screws to mount the control unit, verify that transmission or hydraulic lines, electrical cables, or other operating systems will not be damaged.

Mount the control unit and loudspeaker according to the instructions that accompany the control unit mounting assembly.

The loudspeaker is not a separate unit in the ALPHA CELLPHONE model.



## SECTION 6

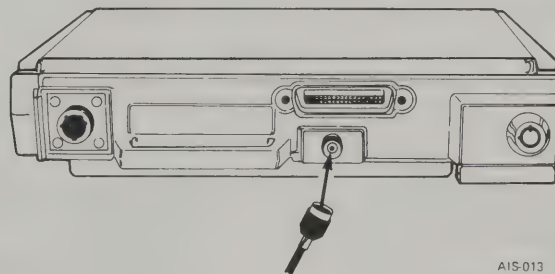
### MOUNTING AND CONNECTING THE ANTENNA

Refer to page 6 for information on the various types of antennas and possible mounting locations.

1. Mount the antenna, following the instructions provided with the antenna.
2. Route the antenna cable to the transceiver.

Cable from a roof-mounted antenna should be fed between the roof and inner lining to the side of the vehicle (same side as transceiver). The cable can then be routed along window frames to the area where the transceiver is installed. Feed the cable into vehicle interior, through an existing hole (if possible) or through a hole you have drilled. (Install grommets in holes to prevent cutting or chafing of the cable.)

3. Connect the antenna cable to the transceiver.



AIS-013

Push the connector straight on, and then tighten the collar.

## SECTION 7

### ELECTRICAL CONNECTIONS

Refer to diagram on page 15.

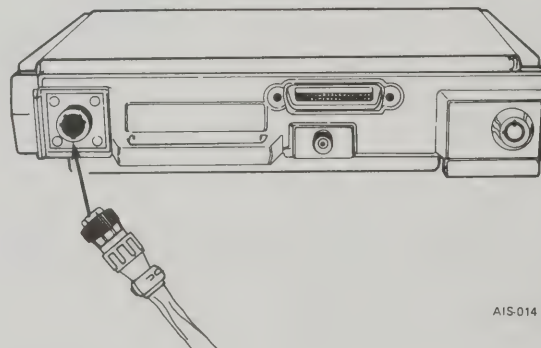
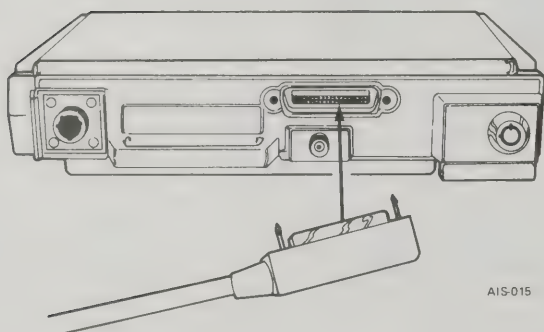
#### WARNING

Severe damage to the vehicle may result from improper fuse location or lack of fusing. Any wires connected to the positive battery terminal must be fused at the battery.

#### NOTE

To prevent accidental short-circuiting when installing the power cable, disconnect the ground strap from the vehicle battery.

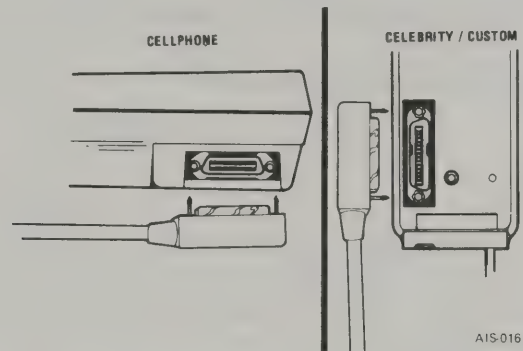
1. Connect control and power cables to the transceiver.



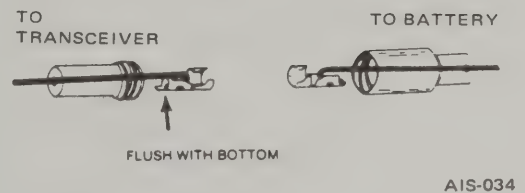
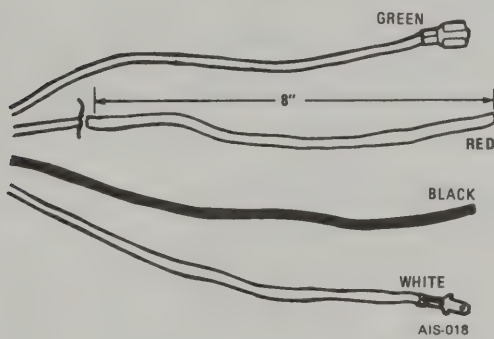
- a. Plug the control cable into the "D"-shaped connector, and tighten the connector locking screws.
  - b. Plug the power cable into the round connector and tighten the collar.
2. Route the control and power cables (see page 4 for cable routing considerations).
    - a. Remove screws, push-pins, or other hardware securing moldings, carpeting, or other parts of the vehicle that must be removed to lay the cable. Do not route cables under rugs, where they will be stepped on. (Removal of the doorstep trim and rear seat often reveals suitable cable paths.)
    - b. If the cable is to be routed through a partition, look for a hole to use. If there is no suitable hole, drill one. Install grommets at any routing holes to prevent cutting or chafing of the cable.



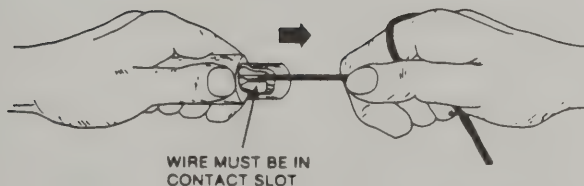
- c. Route the control cable to the control unit, and route the power cable to the engine compartment. (Keep the power cable away from hot or moving parts of the engine.)
  - d. Route the white wire of the power cable to the fuse block in the passenger compartment.
3. Connect the control cable to the control unit.



4. Install primary power in-line fuseholder (5AG).



- a. Cut red lead about 8 inches back from the end.
- b. Thread each cut end of the lead through the appropriate fuse housing, as shown above. Loop the wire into the terminal (end must be flush).



- c. Holding the housing, pull each wire into terminal slot until stop is reached.
- d. Insert fuse, and screw housing together lightly. Do not over-tighten.

5. Refer to the instructions with the Battery Taps<sup>TM</sup>. Using the red Battery Tap, connect the red lead to the positive (+) battery cable. Tape the lead to the cable to provide strain relief.
6. Using the black Battery Tap, connect the black lead to the negative (-) battery cable. Tape the lead to the cable to provide strain relief.
7. Insert a 4-amp fuse and fuseholder in the white lead from the power cable, approximately 8 inches from the end of the lead. (See step 4.)
8. Connect the white wire from the power cable to the vehicle ignition switch (accessory or auxiliary position\*).

#### NOTE

Power [(+) Battery] must be applied to the white lead to turn on the control unit. When this lead is connected to the ignition switch (as recommended), the ignition must be turned on to operate the mobile telephone.

The white lead may be connected to the positive (+) battery cable (via the Battery Tap used for the red lead) to allow operation of the mobile telephone when the ignition is turned off. However, the Horn Alert option cannot be used unless the white lead is connected to the ignition switch.

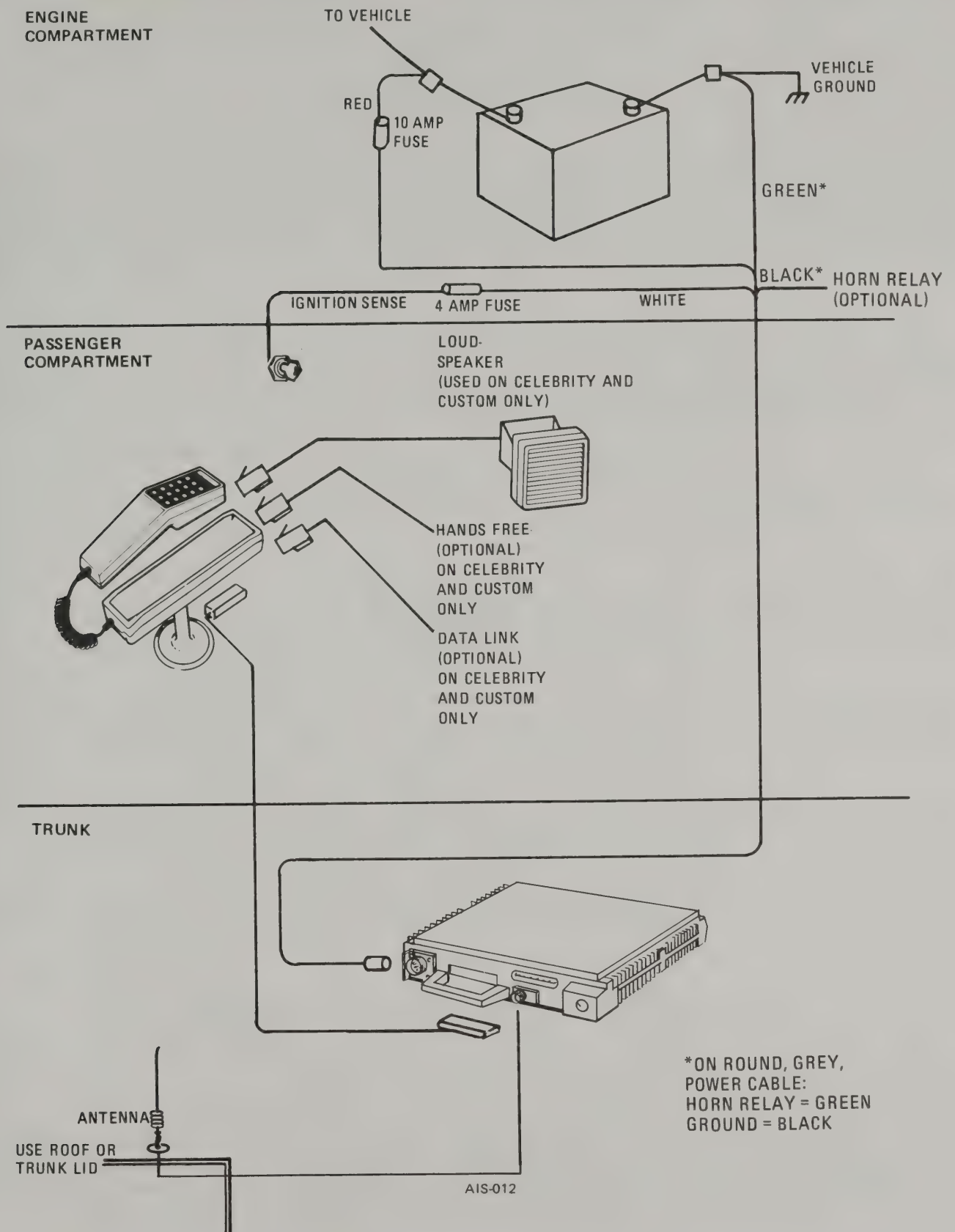
If the Horn Alert option is installed, the horn will sound when a call is received only if the vehicle ignition is off. (When the Horn Alert function is selected, the mobile telephone stays on when the ignition is turned off.)

9. Reattach ground strap to the battery.

<sup>TM</sup> Battery Tap is a trademark of WHISCO COMPONENT ENGINEERING, INC.

\* Usually found at, or near, fuse box under the dash-board.





SECTION 8  
OPERATION TEST

1. Turn on vehicle ignition.
2. Turn power on at control unit and verify that the unit responds as described in the Operator's Instruction Manual. If the response is incorrect, check the following:
  - Fuse connections
  - Cable connections
  - Grounding
  - Battery Charge
  - Has the transceiver NAM been programmed?
3. If the NO SERVICE indicator is still on, check the antenna, antenna cable, and that you are in an area where service is available.

**WARNING**

Most late model vehicles have electronic controls. Use of a transmitter may interfere with these controls and cause them to malfunction. Vehicle functions which may involve electronic controls include fuel delivery systems, ignition timing, brakes, emission control and cruise control. Information regarding the type of electronic controls in your vehicle can be obtained from the vehicle manufacturer. Consult your vehicle dealer about any required modifications to your vehicle's electronic controls before installation or use of the transceiver.

**NOTE**

The following checks should not be performed in traffic.

4. Place a call (refer to the Operator's Instruction Manual).
5. While you are connected to another party, check any vehicle functions that may involve electronic controls (see warning above) to be sure that your telephone does not interfere with them. (Other electronic equipment such as stereos, radar detectors, and televisions can also be affected when the telephone is in use.)



## SECTION 9

## PROGRAMMING INFORMATION

Information stored in integrated circuit memories provide five different functions in the ALPHA 4000 series transceivers. Four of these functions: Number Assignment Module (NAM), Non-Volatile Memory (NVM), Serial Number, and Programmed Read Only Memory (ROM) are common to all cellular transceivers. The fifth, a "Feature" ROM is unique to the ALPHA 4000 transceivers. This section highlights these memories and possible differences between the ALPHA 4000 and other cellular transceivers.

The NAM (Number Assignment Module) is a PROM (Programable Read Only Memory) that is programmed with unique user and system information, usually at the time of installation of the mobile telephone. After programming, the NAM is installed in the small socket (XA13) in the middle of the Logic Board. See Table 9-1 for Number Assignment Module (NAM) Format.

Information programmed into the NAM follows the AMPS standards and includes:

**\*\*MIN (Mobile Identification Number):** a 34-bit binary representation of the 10 digit (decimal) mobile phone number.

**\*\*SIDH (System Identification of Home area):** a 15-bit binary identification of the user's home system. The first (most significant) two bits are normally zero ("International bits"). The remaining 13 bits can be represented by a four digit decimal number (from 0001 to 8191).

**\*\*SCM (Station Class Mark):** a 4-bit binary number indicating the type of radio (ie, mobile or portable). For the ALPHA 4000 series transceivers, all four bits should normally be set to zero(00 in decimal, 0 in hex).

**\*\*IPCH (Initial Paging Channel):** an 11-bit binary representation of the first paging channel to be used in the home system. This channel number is normally a three digit (decimal) number. (Unused bits are set to zero.)

**\*\*ACCOLC (Access OverLoad Class):** 1 4-bit binary number defined by the system. It may be represented as a two digit decimal number (00-15) or a single hexadecimal number (0-F).

**\*\*PS (Preferred System):** a 1-bit indication of which cellular system (A or B) the transceiver will monitor first to make and receive calls on. If set to 0, the transceiver will first try system B( the wireline system covering channels 334 to 666). If set to 1, the transceiver will first try system A (the non-wireline system covering channels 1 to 333). In the ALPHA Cellphone, Celebrity and Custom, this is a default setting, since the Feature ROM allows this function to be changed from the control unit. (Refer to operator's manual.) The new system selection is stored in the NVM and does not alter the NAM setting. When installing a new NAM, check operation of unit, as older software will not update NVM with new NAM Data.

**\*\*GIM (Group Identification Mark):** a 4-bit binary number defined by the system. It may be represented by a two digit decimal number (00-15) or a single digit hexadecimal number (0-F).

**\*\*OPTIONS:** four options may be enabled by setting (programming a "1") their appropriate bits.

1. **EE:** End-to-End or DTMF signalling. This bit will normally not be set, unless the transceiver is being used with an ALPHA ET or real-time DTMF dialing is desired. The ALPHA Cellphone, Celebrity, and Custom models generate DTMF dialling from the display register independent of this bit.
2. **REP:** REPertory dialling memory. This bit is normally set and enables the user to store phone numbers in the NVM (RAM).
3. **HA:** Horn Alert. If this bit is set and 'Horn' is selected at the control unit, the phone will stay on when the vehicle ignition is turned off. The vehicle horn or other alerting device will then sound if a call is received.
4. **HF:** Hands Free. This bit should be set only if the 'Hands Free' accessory equipment is connected to the control unit. (Otherwise, improper control unit operation may result.)

**\*Lock Code:** The NAM lock code consists of three decimal digits (each digit a 1-9, or 0) which are stored as three hexadecimal digits (each digit 1-9, or A) (Telephone digit '0' is really a 'ten' and must be stored as a hex 'A'.) A number in this range must be stored in the NAM as the lock code. Do not program the fourth 'spare' lock digit. The lock status is stored in the NVM, so a cellular mobile may be unlocked by removing the NVM from its socket, momentarily.

The ALPHA Celebrity and Custom allow the lock code to be changed from the control unit (refer to the operator's manual). This new lock code (up to 8 digits) is stored in the NVM and does not alter the NAM lock code. The NAM lock code is the initial lock code and becomes the default code if the NVM is ever erased. However, if the NAM lock code is changed, the NVM is not updated in units with older software. If a new lock code is programmed in the NAM, but the control unit does not accept it, erase the NVM or use the procedure below to program the NVM with the new lock code.

The NVM (Non-Volatile Memory) is a RAM (Random Access Memory) which is made non-volatile (keeps its memory) by a small battery inside the transceiver. However, if the NVM IC is removed from its socket, (XA4 on the Logic Board) all NVM memory contents will be lost. The NVM is the only memory that the user can change and is the storage location for the user's stored phone numbers (repertory dialling).

The NVM is also used by the transceiver logic for temporary storage of data such as lock status. The NVM is normally a 24 pin IC installed in a 28 pin socket (XA4). A 28 pin IC is used in the ALPHA Custom to handle its additional memory requirements.

The SN (Serial Number) is a PROM similar to the NAM that is programmed at the factory with the transceiver ESN (Electronic Serial Number). Once programmed, it cannot be changed or



removed from the transceiver. The ESN is transmitted whenever a call is made or received by the mobile telephone and is used for identification purposes by the Cellular System Operator. The mobile ESN must be registered with the Cellular Service Operator when a mobile phone number is assigned.

The Cellular Service company can compare serial numbers with phone numbers and deny service to any mobile that does not match.

The information in the SN is stored as a 32-bit binary number. The first (most significant) 8 bits designate the transceiver manufacturer.

For Harris, it is 10001001 in binary,

89 in hexadecimal,  
137 in decimal  
211 in octal

The last (least significant) 18 bits are for the transceiver serial number. This 18-bit binary number can be expressed as a 5 digit hexadecimal number, or as a 6 digit decimal or octal number. The remaining 6 bits in the middle are reserved and are always set to zero. These three fields are then combined to produce an 8 digit hexadecimal number or an 11 digit decimal or octal number.

The serial number on the back of an ALPHA 4000 series transceiver consists of 8 digits. The first two are a date code (month, year) and the remaining 6 digits are the transceiver serial number (in decimal). Thus, the ESN in decimal would be 137 (Harris code), followed by 00 (reserved field), followed by the last six digits on the serial number plate.

The ESN in hexadecimal will always be found written on the Feature ROM (IC in socket XA7), and will be an 8 digit number starting with '89'. (The Feature ROM has the ESN written on it since it will only work in that transceiver.) The ESN in decimal, hex, and octal will also be found on the top of the test data sheet packed with every transceiver.

The Program ROM (Read Only Memory), consisting of one or two ICs installed in sockets XA5 and XA6, is the main program that directs the operation of the microprocessor and peripheral circuits to function as a cellular mobile telephone according to the specifications of AMPS and the FCC. These ICs are programmed and installed at the factory and should never have to be removed unless it becomes necessary to update the software.

The Feature ROM is an additional program ROM that is installed in socket XA7. It includes extra commands for the microprocessor to carry out to produce the unique ALPHA Cellphone, Celebrity, and Custom features. Without a ROM plugged into XA7, the transceiver will operate as a 'standard' cellular telephone. (The AL-4000, ALPHA C model, is supplied without a feature ROM.)

The Feature ROM allows any ALPHA 4000 mobile telephone to be upgraded by simply changing the control unit and the Feature ROM. The Feature ROM can be changed in the field, but it must have the transceiver's ESN programmed into it, or the transceiver will not operate.



<u>MODEL #</u>	<u>NAME</u>	<u>FEATURE ROM P/N</u>
AL-4000	ALPHA C	(None)
AL-4200	ALPHA Cellphone	10137-1080
AL-4400	ALPHA Celebrity	10137-4080
AL-4600	ALPHA Custom	10137-6080

An ALPHA 4000 transceiver connected into an ALPHA ET configuration should not have a feature ROM installed. If an ALPHA 4000 with a feature ROM is to be connected up to an ALPHA ET, remove the feature ROM and erase the NVM (IC in socket XA4) by removing it and then carefully replacing it in the socket. If the NVM is not erased, there may be data or instructions stored in it that will prevent the proper operation of the ALPHA ET.

**Table 9-1. NUMBER ASSIGNMENT MODULE (NAM) FORMAT**

MARK DEFINITION	MOST							BIT SIGNIFICANCE							LEAST		ADDRESS HEX
L.U.= Local Use	0	SIDH (14-8)														00	
	SIDH (7-0)															01	
	L.U.	0	0	0	0	0	0	0	MIN							02	
	0	0	MIN 2 (33-28)													03	
	MIN 2 (27-24)							0	0	0	0						04
	0	0	0	0	0	MIN 1 (23-20)							05				
	MIN 1 (19-12)															06	
	MIN 1 (11-4)															07	
	MIN 1 (30)							0	0	0	0						08
	0	0	0	0	0	SCM (3-0)							09				
	0	0	0	0	0	0	IPCH (10-8)							0A			
	IPCH (7-0)															0B	
	0	0	0	0	0	ACCOLC (3-0)							0C				
P.S.= Preferred System	0	0	0	0	0	0	0	0	P.S.							0D	
	0				0	0	0	0	GIM (3-0)							0E	
	LOCK Digit 1							LOCK Digit 2							0F		
	LOCK Digit 3							LOCK Spare bits							10		
E.E.= End-to-End Signaling REP.=Repertory H.A.=Horn-Alert H.F.=Hands-Free f=Function (not used)	E.E.	0	0	0	0	0	0	0	REP.							11	
	H.A.	0	0	0	0	0	0	0	H.F.							12	
	f7	f6	f5	f4	f3	f2	f1	f0								13	
	SPARE LOCATIONS CONTAINING ALL ZEROES															14-1D	
	NAM CHECKSUM ADJUSTMENT															1E	
NAM CHECKSUM															1F		









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